Montana Avenue Safety Improvements

- Presentation of Project Alternatives

- *Midway Elementary School*
- *August 14, 2008*

Presentation Overview

- Study Area and Existing Conditions
  - Crash History
  - Traffic Operations
  - Transit
  - Pedestrians and Bicycles
- Project Alternatives
  - Safety Assessment
  - Operations Evaluation
  - On-Street Parking
  - Impacts to transit, pedestrians, bicyclists
  - Other considerations

Montana Avenue - Study Area

- 1.8 Mi Section from Boudinot Ave to Farrell Dr
- Classified as Principal Arterial

Existing Conditions

- Four-lane undivided roadway
- 9 ft. lane widths
- On-street parking with peak hour directional restrictions
- 18,000 ADT
- Posted speed – 35 mph
- 85th Percentile speed - ranges 39 to 43 mph

Crash History

- Total Crashes (2004-07) – 624
- Most prominent types:
  - Rear-End – 31 %
  - Sideswipe – 29 %
  - Angle-or approach-turn – 20 %
- Intersections with high crash rates:
  - Boudinot Avenue
  - Epworth Avenue
  - Westwood Northern Blvd

Existing Traffic Operations

LOS C at WWNB

- Six Traffic Signals
- Operates with one lane in each direction except peak
- LOS C or better during AM and PM peaks
- Adequate operations – no queuing issues
- Merging issues between Harrison and McFarlan

Existing Transit

- **Two bus routes:**
  - 39 – Western Hills – Uptown
    - 30 min headways in AM and PM
  - 40X – Montana Express
    - 10-20 min headways in AM and PM only

Existing Pedestrian and Bicycles

- Existing sidewalks - both sides
- Moderate pedestrian volumes
- No bicycle observations
- Nearby activities – schools, churches, libraries, town hall

Alternatives

- **No Build**
- **Four-lane widening**
- **Three-lane section**
- **Three-lane with on-street parking**
- **Hybrid - Four-lane widening from NE limits to WWNB and three-lane section with on-street parking from Boudinot Avenue to WWNB**
- **Five lane section – not analyzed due to significant property impacts**

All alternatives include sidewalk/landscape upgrade (except No Build):

- **3.5' landscaping**
- **5' sidewalk**

Alternatives – No Build

- 36’ pavement width (34’ sections)
- Four 9’ lanes

Alternatives – Four-lane widening

- 42’ pavement width
- Widen 3’ each side
- Two 11’ curb lanes & two 10’ center thru lanes with LTs at signals

Alternatives – Three-Lane Section

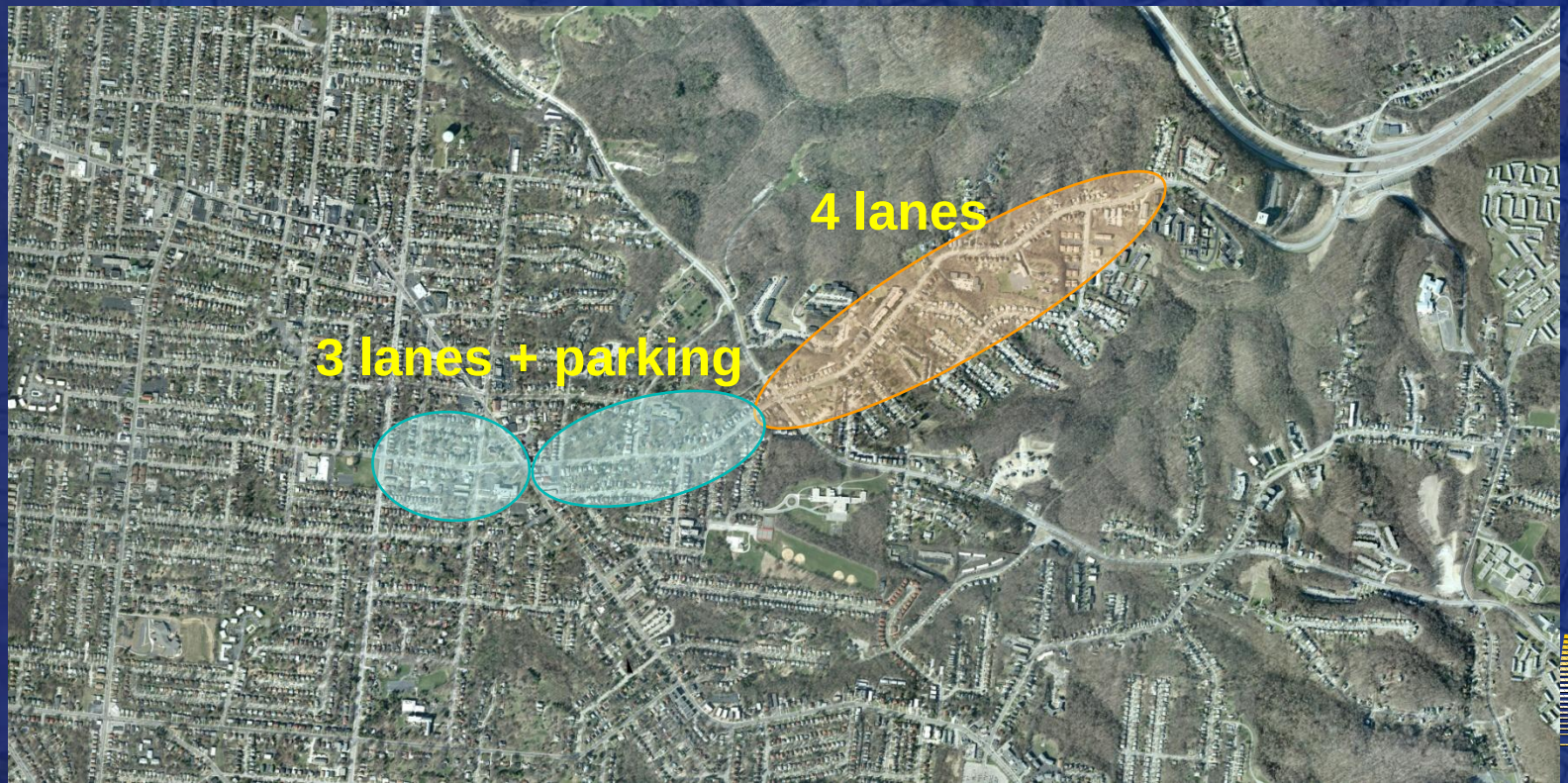
- 36’ pavement width
- 13’ curb lanes and 10’ center turn lanes with LTs at signals
- No on-street parking

Alternatives – Three-Lane Section + alternating on-street parking

- 42′ pavement width
- Widen 3′ each side
- 13′ curb lane, 10′ center turn lane, 11′ through lane, 8′ on-street parking with LTs at signals

Hybrid

- 42’ pavement width
- Four-lane widening from NE limits to WWNB
- Three-lane section with on-street parking from Boudinot Ave to WWNB



Alternatives – Safety Assessment

ALTERNATIVE	SAFETY RELATED IMPROVEMENT	SPEEDS	CRASH TYPES AND PATTERNS	CRASH RATES
No Build	None	Speeds remain at current levels	- No change	Potential increase in crashes with increased traffic volume
Four-lane widening	Improved geometry and lane widening	Potential increase in speeding	-Potential severity of crashes decreased -Potential decrease in rear-end collisions at intersections due to the addition of the left turn lane	Improvement due to wider lane widths and left turn lanes
Three-lane section	Lane widening and addition of center turn lane	Reduced speeds and speed variability	-Potential decrease in side-swipe crashes due to reduced weaving and wider lanes -Potential decrease in angle- or approach turn and rear-end crashes due to left turn lanes -Potential decrease in rear-end and pedestrian/bike crashes due to reduced speeds and center turn lane -Decrease in "parked motor vehicle" crashes due to restricted street parking	Improvement – sight distance, less conflict points, no weaving, slower speeds
Three-lane section with alternating on-street parking	Lanes widening and addition of center turn lane	Speeds further reduced	-Potential decrease in side-swipe crashes due to reduced weaving and wider lanes -Potential decrease in angle- or approach turn and rear-end crashes due to center turn lane and left turn lanes -Potential decrease in rear-end and pedestrian/bike crashes due to reduced speeds and center turn lane -Potential decrease in "parked motor vehicle" crashes due to reduced speeds	Improvement – sight distance, less conflict points, no weaving, slower speeds
Hybrid	Improved geometry and lane widening	Speeds reduced on three-lane section	-See improvements for four-lane widening and three-lane with on-street parking	See improvements above for four-lane widening and three-lane with on-street parking

Alternatives – Traffic Operations Analysis

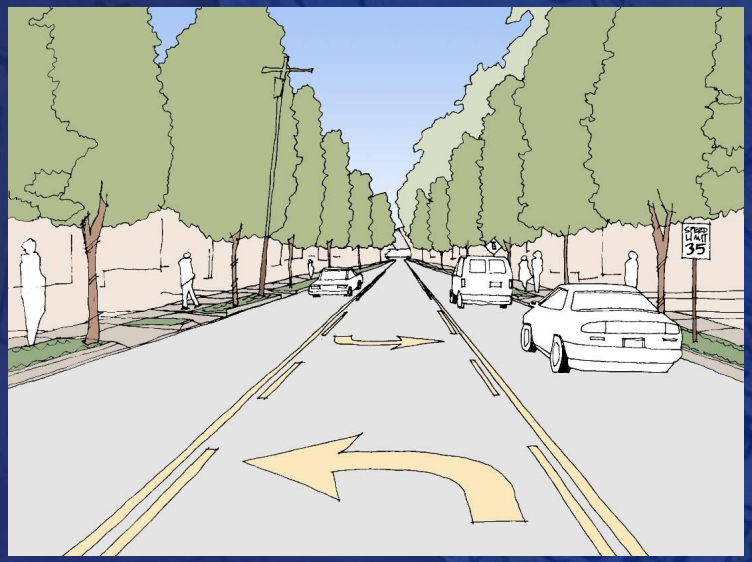
- Future volumes – 1% per year growth, 20 yrs
- Optimized traffic signals
- Added left turns to Montana Avenue at Westwood Northern Boulevard
- AM and PM Peak Hour

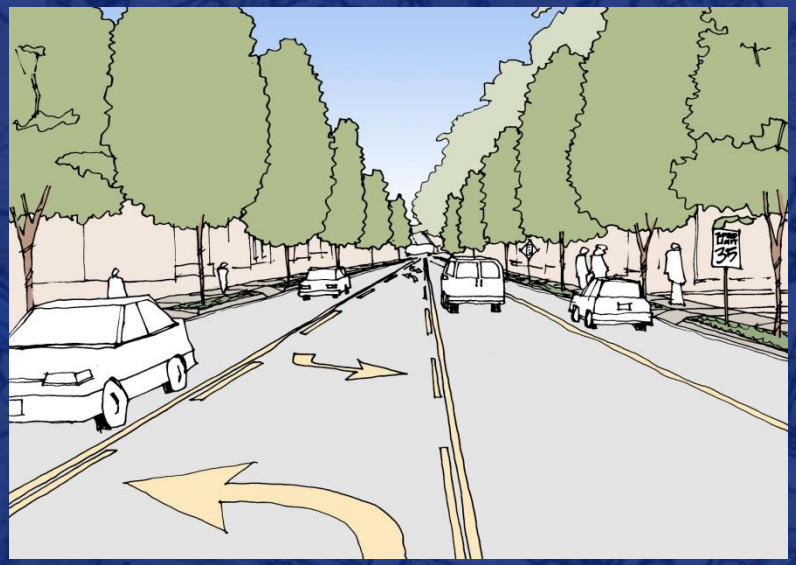
Four-Lane Alternatives – Traffic Operations Analysis

- Adequate traffic operations
- All intersections at LOS C or better
- Operation assumes directional on-street parking restrictions during peak hours

Three-Lane Alternatives – Traffic Operations Analysis

- Added right turn lanes on Montana Ave at WWNB
- Adequate traffic operations except at WWNB and Anaconda Dr
- WWNB – LOS F, average delay of 90 seconds - AM peak
- Anaconda Dr – LOS E, average delay of 56 seconds - AM peak
- Operates adequately with exist volumes except WWNB (LOS E)





Hybrid Alternative – Traffic Operations Analysis

- Adequate traffic operations
- All intersections at LOS D or better

Alternatives – Pedestrians

Alternative	Pedestrian Impact
No Build	Pedestrian environment remains the same. Potential degradation over time.
Four-lane widening	Pedestrian environment is improved with addition of landscaping and standard sidewalk widths. Potential increase in speeding but still have on-street parking providing buffer to pedestrians.
Three-lane section	Pedestrian environment improved since speeds are slower and less number of lanes to cross. Only minimal landscaping and standard sidewalk widths – spot improvements.
Three-lane section with on-street parking	Pedestrian environment improved since speeds are slower and less number of lanes to cross. On-street parking provides a buffer on one side of the roadway for pedestrians from moving traffic. Landscaping and standard sidewalk widths further improve pedestrian environment and safety.
Hybrid	See improvements above for four-lane widening and three-lane with on-street parking.

Alternatives – Transit

- **Wider lanes needed**
  - Buses 10’ wide - losing mirrors with 9’ lanes
- **Transit Users – See Pedestrians**
- **No Build – lanes too narrow for buses**
- **4 lanes widening – buses don’t impede traffic**
- **3 lanes without parking – buses stop traffic – SORTA concerns with uphill sections**
- **3 lanes with parking – SORTA prefers bus pull-outs with on-street parking and to locate parking on uphill side**

Alternatives – Contextual Considerations

- **On-Street parking included:**
  - Four-lane widening
  - Three-lane with alternating parking
  - Hybrid
- **Loss of parking to residents and businesses in three-lane alternative**
- **Access point density – High**
- **Right turn lanes needed on Montana Ave at WWNB for three-lane alternatives**
- **Need improved safety and livability along Montana**

General Questions